

High-Resolution, High-Efficiency, Curved Diffraction Gratings Fabricated by Conformable, Maskless, 100-nm Lithography, Phase I

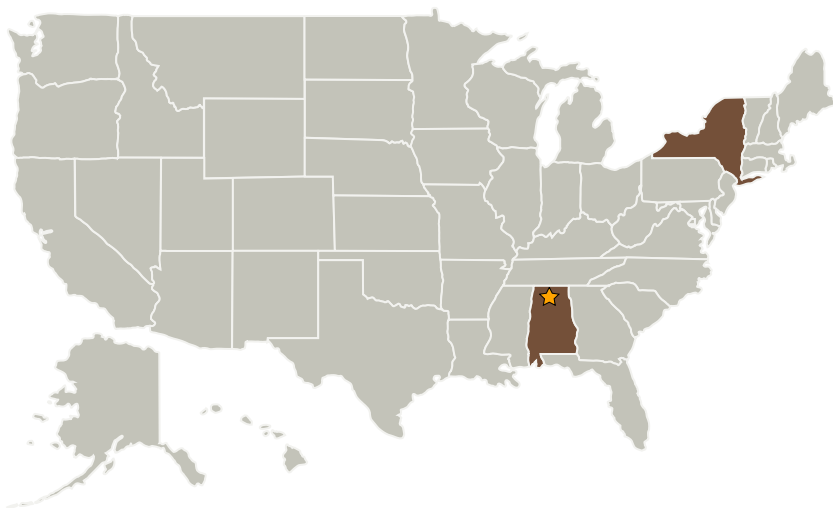
Completed Technology Project (2004 - 2004)



Project Introduction

In this program, we will develop a novel process for fabricating large-area ultraviolet diffraction gratings on curved surfaces. This process is based on a unique conformable maskless projection lithography system technology that has been developed by Anvik Corporation. The UV gratings that will be fabricated using this technology would be attractive for integration into imaging spectrometers, for example, for studying the solar corona and solar emissions, and their influence on the earth environment. In this program we will identify the patterning requirements for curved UV gratings and we will demonstrate the feasibility of fabricating gratings using conformable maskless lithography. Anvik's conformable maskless technology offers a number of advantages compared with currently available grating fabrication techniques, most significantly, it enables the patterning of sub-micron gratings on substrates having large sags.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Marshall Space Flight Center (MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
Anvik Corporation	Supporting Organization	Industry	Hawthorne, New York



High-Resolution, High-Efficiency,
Curved Diffraction Gratings
Fabricated by Conformable,
Maskless, 100-nm Lithography,
Phase I

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	2
Project Management	2
Technology Areas	2

High-Resolution, High-Efficiency, Curved Diffraction Gratings Fabricated by Conformable, Maskless, 100-nm Lithography, Phase I

Completed Technology Project (2004 - 2004)



Primary U.S. Work Locations

Alabama

New York

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center
(MSFC)

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Marc Klosner

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.1 Detectors and Focal Planes